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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,728	12/07/2005	Kunihiro Mima	2005_1840A	1832

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EXAMINER	
MANDEVILLE, JASON M	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,728	MIMA ET AL.	
	Examiner	Art Unit	
	JASON M. MANDEVILLE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 October 2008 has been entered.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 24 May 2004. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 3, and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima (JP-2003-323150).

5. As pertaining to **Claim 1**, Kojima discloses (see Fig. 1 and Fig. 2) a method for driving a plasma display panel (10; also see Abstract) having a scan electrode (17Y), a sustain electrode (17X) and a data electrode (13A) forming a discharge cell at a point of intersection therebetween (see Para. [0024] and [0026]-[0027]), the method for driving the plasma display panel comprising (Fig. 3 and Fig. 4 through Fig. 7; also see Para. [0028]-[0030]):

generating, during an initialization period (i.e., a reset period), an initialization discharge in the discharge cell (see Para. [0030]);

generating, during a writing period (i.e., an addressing period), a writing discharge in the discharge cell (see Para. [0031]); and

generating, during a sustain period (i.e., a sustaining period), a sustain discharge by alternately applying sustain pulses to the scan electrode (17Y) and sustain electrode

(17X) of the discharge cell (see Para. [0032]-[0035]; also see Fig. 3 and Fig. 4 through Fig. 7),

wherein a rise time of a sustain pulse (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) applied to the scan electrode (17Y) during the sustain period is shortened at a frequency of once every three times a sustain pulse is applied thereto (again, see Fig. 6 and Fig. 7; also see Para. [0039]-[0044]),

wherein a rise time of a sustain pulse (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) applied to the sustain electrode (17X) during the sustain period is shortened at a frequency of once every three times a sustain pulse is applied thereto (again, see Fig. 6 and Fig. 7; also see Para. [0039]-[0044]),

wherein sustain pulses (i.e., see (32c) in Fig. 6, for example; also see Fig. 7), applied to the scan electrode (17Y) and the sustain electrode (17X) between the sustain pulses having the shortened rise time (i.e., see (32b) in Fig. 6, for example; also see Fig. 7), have a non-shortened rise time (i.e., the rise time of (32c) is longer than the rise time of (32b)) that is longer than the shortened rise time (i.e., see (32b) in Fig. 6; also see Fig. 7; also see Para. [0039]-[0044]), and

wherein a rise time of each of the sustain pulses having the non-shortened rise time (i.e., see (32c) in Fig. 6; also see Fig. 7) is the same (again, see Para. [0039]-[0044]).

While the repetition of sustain pulses is implicit in the teachings of Kojima, Kojima shows only a single iteration of the sustain pulse waveforms (see Fig. 4 through Fig. 7).

As such, Kojima does not explicitly show, with reference to Fig. 4 through Fig. 7) that the rise time of a sustain pulse applied to the scan electrode and the sustain electrode is shortened at a frequency of once every three times a sustain pulse is applied thereto. However, Kojima does explicitly state that the rise time of a sustain pulse applied to the scan electrode and/or the sustain electrode can be shortened at any arbitrary frequency (see Fig. 4 through Fig. 7; also see Para. [0041]-[0044]). In fact, Kojima explicitly states, with reference to Fig. 6 that the waveforms (32a, 32b, 32c) are repeated, in order, for both the scan and sustain electrodes (i.e., (17Y, 17X); see Para. [0041]). Therefore, without making reference to any additional teaching, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the sustain pulses (as shown in Fig. 6, for example) can be repeated in order, and that the rise time of a sustain pulse (i.e., see (32b) as referenced to Fig. 6) is shortened at a frequency of once every three times a sustain pulse is applied thereto, with the sustain pulses having non-shortened or longer rise times (i.e., see (32c) as referenced in Fig. 6) interspersed between and having the same non-shortened rise time (i.e., see (32c)). Further, the teachings of Kojima render it to one of ordinary skill in the art to try shortening the rise time of a sustain pulse applied to the scan electrode and/or sustain electrode during the sustain period at any arbitrary frequency in order to stabilize the sustaining discharge (see Para. [0033]-[0035]).

6. As pertaining to **Claim 3**, Kojima discloses (see Fig. 1 and Fig. 2) a method for driving a plasma display panel (10; also see Abstract) having a scan electrode (17Y), a

sustain electrode (17X) and a data electrode (13A) forming a discharge cell at a point of intersection therebetween (see Para. [0024] and [0026]-[0027]), the method for driving the plasma display panel comprising (Fig. 3 and Fig. 4 through Fig. 7; also see Para. [0028]-[0030]):

generating, during an initialization period (i.e., a reset period), an initialization discharge in the discharge cell (see Para. [0030]);

generating, during a writing period (i.e., an addressing period), a writing discharge in the discharge cell (see Para. [0031]); and

generating, during a sustain period (i.e., a sustaining period), a sustain discharge by alternately applying sustain pulses to the scan electrode (17Y) and sustain electrode (17X) of the discharge cell (see Para. [0032]-[0035]; also see Fig. 3 and Fig. 4 through Fig. 7),

wherein a rise time of a sustain pulse (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) applied to the scan electrode (17Y) during the sustain period is shortened at a frequency of one of (i) once every two times and (ii) once every three times, a sustain pulse is applied thereto (again, see Fig. 6 and Fig. 7; also see Para. [0039]-[0044]),

wherein a rise time of a sustain pulse (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) applied to the sustain electrode (17X) during the sustain period is shortened at a frequency of one of (i) once every two times and (ii) once every three times, a sustain pulse is applied thereto (again, see Fig. 6 and Fig. 7; also see Para. [0039]-[0044]),

wherein sustain pulses (i.e., see (32c) in Fig. 6, for example; also see Fig. 7), applied to the scan electrode (17Y) and the sustain electrode (17X) between the sustain pulses having the shortened rise time (i.e., see (32b) in Fig. 6, for example; also see Fig. 7), have a non-shortened rise time (i.e., the rise time of (32c) is longer than the rise time of (32b)) that is longer than the shortened rise time (i.e., see (32b) in Fig. 6; also see Fig. 7; also see Para. [0039]-[0044]), and

wherein a rise time of each of the sustain pulses having the non-shortened rise time (i.e., see (32c) in Fig. 6; also see Fig. 7) is the same (again, see Para. [0039]-[0044]).

While the repetition of sustain pulses is implicit in the teachings of Kojima, Kojima shows only a single iteration of the sustain pulse waveforms (see Fig. 4 through Fig. 7). As such, Kojima does not explicitly show, with reference to Fig. 4 through Fig. 7) that the rise time of a sustain pulse applied to the scan electrode and the sustain electrode is shortened at a frequency of once every three times a sustain pulse is applied thereto. However, Kojima does explicitly state that the rise time of a sustain pulse applied to the scan electrode and/or the sustain electrode can be shortened at any arbitrary frequency (see Fig. 4 through Fig. 7; also see Para. [0041]-[0044]). In fact, Kojima explicitly states, with reference to Fig. 6 that the waveforms (32a, 32b, 32c) are repeated, in order, for both the scan and sustain electrodes (i.e., (17Y, 17X); see Para. [0041]). Therefore, without making reference to any additional teaching, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that

the sustain pulses (as shown in Fig. 6, for example) can be repeated in order, and that the rise time of a sustain pulse (i.e., see (32b) as referenced to Fig. 6) is shortened at a frequency of once every three times a sustain pulse is applied thereto, with the sustain pulses having non-shortened or longer rise times (i.e., see (32c) as referenced in Fig. 6) interspersed between and having the same non-shortened rise time (i.e., see (32c)). Further, the teachings of Kojima render it to one of ordinary skill in the art to try shortening the rise time of a sustain pulse applied to the scan electrode and/or sustain electrode during the sustain period at any arbitrary frequency, including once every two times and once every three times, in order to stabilize the sustaining discharge (see Para. [0033]-[0035]).

7. As pertaining to **Claim 4**, Kojima discloses (see Fig. 6 and Fig. 7) that a time delay exists between applying the sustain pulse having the shortened rise time (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) to the scan electrode (17Y) and applying the sustain pulse having the shortened rise time (i.e., see (32b) in Fig. 6, for example; also see Fig. 7) to the sustain electrode (17X), the time delay causing the sustain pulse having the shortened rise time (i.e., (32b)) to be applied to the sustain electrode (17X) only after a falling edge of the sustain pulse having the shortened rise time (i.e., (32b)) has occurred on the scan electrode (17Y) and a rising edge of a sustain pulse having a non-shortened rise time (i.e., see (32c) in Fig. 6, for example; also see Fig. 7) has occurred on the scan electrode (17Y; as clearly shown in Fig. 6, because the sustain pulse waveforms are repeated (see Para. [0041]), the sustain pulse (32b) with the

shortened rise time will be repeated (32a, 32b, 32c, 32a, 32b, …) on the sustain electrode (17X) such that the sustain pulse (32b) will be applied to the sustain electrode (17X) only after a falling edge of the sustain pulse (32b) having the shortened rise time has occurred on the scan electrode (17Y; see Fig. 6) and a rising edge of a sustain pulse (32c) having a non-shortened rise time has occurred on the scan electrode (17Y; see Fig. 6); further, with reference to Fig. 6 and Fig. 7, Kojima shows that the sustain pulse having a non-shortened rise time can be inserted on the scan electrode (17Y) before or after a sustain pulse having a shortened rise time occurs in either or both of the scan electrode and/or the sustain electrode).

Response to Arguments

8. Applicant's arguments filed 24 November 2008 have been fully considered but they are not persuasive. The applicant has argued that the reference relied upon by the examiner, namely Kojima (JP-2003-323150), does not teach or fairly suggest that the rise time of the sustain pulse applied to the scan and sustain electrodes can be shortened at a frequency of once every three times a sustain pulse is applied thereto. The applicant has further argued that Kojima does not teach or fairly suggest sustain pulses with a non-shortened rise time applied between the sustain pulses with the shortened rise time, wherein the rise time of the sustain pulses with the non-shortened rise time have the same rise time. The examiner respectfully disagrees for the reasons

provided in the above rejections. To summarize, Kojima explicitly discloses the use of sustain pulses applied to the scan and sustain electrodes having both shortened and non-shortened rise times. As an example, Fig. 6 clearly shows the sustain pulses with shortened rise times (i.e., (32b)) and sustain pulses with non-shortened rise times (i.e., (32c)) applied to the scan electrode (17Y) and the sustain electrode (17X). Further, Kojima explicitly states that the sustain pulse pattern can be repeated (see Para. [0041]). Thus, it would have been obvious to one of ordinary skill in the art that by repeating the pattern of sustain pulses shown in Fig. 6 for the scan and sustain electrodes (17Y, 17X), the sustain pulses with the shortened rise times (32b) are applied at a frequency of once every three times with sustain pulses having a non-shortened rise time (32c) applied between, wherein the rise time of the sustain pulses with the non-shortened rise time (32c) have the same rise time. The examiner has provided this rationale as the basis for the rejection of **Claims 1, 3, and 4**; however, Kojima additionally teaches that the variation in the rise times of the sustain pulses can occur only on the first pulse applied to the scan electrode (17Y; see Fig. 4), on the first pulse applied to both the scan electrode (17Y) and the sustain electrode (17X; see Fig. 5), on any number of pulses, not just the first pulse, applied to either or both of the scan electrode (17Y) and the sustain electrode (17X) and repeated in a pattern (see Fig. 6), or randomly on any pulse applied to either or both of the scan electrode (17Y) and the sustain electrode (17X; see Fig. 7).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON M. MANDEVILLE whose telephone number is 571-270-3136. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Mandeville
Examiner
Art Unit 2629

/J. M. M./
Examiner, Art Unit 2629

/Regina Liang/
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